Women Participation in OpenStreetMap Survey Analysis

The aim of the survey was to identify/determine:

1. The gaps that exist between the participation of those who identify as women as to other genders.
2. What prevents those who identify as women from participating in open communities (unseen/unheard)?
3. How best to encourage those who identify as women to participate in open communities
4. How the participation of those who identify as women already active in open communities can be increased and retained.

Participation is redefined in this context ; *"Participation does not only entail those who contribute by mapping; the OSM has a diverse range of work that makes it work. Leaders, publishers, mappers, and the environment that have been studied".*
(Stellamaris Wavamunno Nakacwa, Program Director, Youthmappers Everywhere She Maps)

The survey was distributed across several OpenStreetMap platforms, including the OpenStreetMap Community Forum, OSM Diary, HOT slack and various YouthMapper groups, as well as on social media platforms. The results of the survey showed that the majority (54%) of those who responded are women, which may be due to the fact that it was a study geared towards women's participation. Nevertheless, it is a good sign as it shows that there are more women involved in OSM activities as compared to the survey done by a Humanitarian OpenStreetMap Team (HOT) post published on March 7, 2018, which accounted for women less than 20%, which shows the underrepresentation of women in OSM. The study sought to investigate gender diversity within the OpenStreetMap (OSM) community, as well as the difficulties and potential for boosting gender representation and highlighted some reasons for the disparity which include cultural factors and barriers associated with technology of which correlates with this survey where some of the reasons stated by the women during the survey was it been technical, have little or no knowledge about it…

The analysis of the survey on women participation in OSM also depicted similar reasons highlighted by the study done by HOT in 2018, even though there are quite a number of women involved in OSM. The respondents went further to state some of the reasons they do not get very involved in the OSM activities. Based on observations of the past studies and the recent survey, there has been an improvement in the involvement of women in OSM but there is more to be done to see the change we want , ***that is, seeing more and more women in key positions or lead in governance in OSM communities and not only be at the contribution of map edits but at every level of involvement in OSM since this OSM ecosystem is large and entails just more than mapping and this change should be seen in global, regional and local level of OSM.***

Below are a few recommendations:

1. ***Acknowledgement of the problem:*** *The first is that we have to recognize that there is an underrepresentation of women in OSM, not only in contributions but also in governance and other aspects. This will help us appreciate the issues faced by the underrepresented and address them rather than just ignoring the fact that there is an issue.*
2. *Local OSM communities and the general OSM community at large should give women the opportunity to be at the forefront, support them, and give them the recognition they need.*
3. *Also, to make sure women are retained in the community, we should do well to do away with biased statements or gender-sensitive topics, as they deter women and make them unattractive.*

A webinar was held to also sought for perspectives from the speakers of the participation of women in OSM and below are some highlights;

During the webinar the speakers highlighted the following as that which motivated them to contribute to OSM :

1. The need for data
2. It was in her line of study and she knew the importance of it in planning.
3. The will to help others

And to share their experiences they have had so far coming into contact with OSM, there were both positive and negative experiences of which few are highlighted below:

1. The volunteering spirit and fact that OSM celebrates diversity and is able to listen and improve even though there is still more to be done. (Positive)
2. The issue of encountering condescending people as you grow which can be discouraging for especially women. (Negative)

With their perspective on women participation in OSM, the following were there thoughts:

1. Women participation is fairly good but they do not get the recognition they need to be in the light.
2. Women participation in general is low but we can address that by first tackling the barriers to STEM starting with our children.
3. Some women feel intimidated by men-populated spaces hence they do not participate in activities.

"We should recognize the need to address gender disparity in OSM and create a deliberate move to address those issues". *(Stellamaris Wavamunno Nakacwa, Program Director, Youthmappers Everywhere She Maps)*

More from the webinar can be accessed here

More examples can be found in the comprehensive study below:

155 participants took part in the survey. The participants came from over 50 countries across the world and they are represented in the map below:

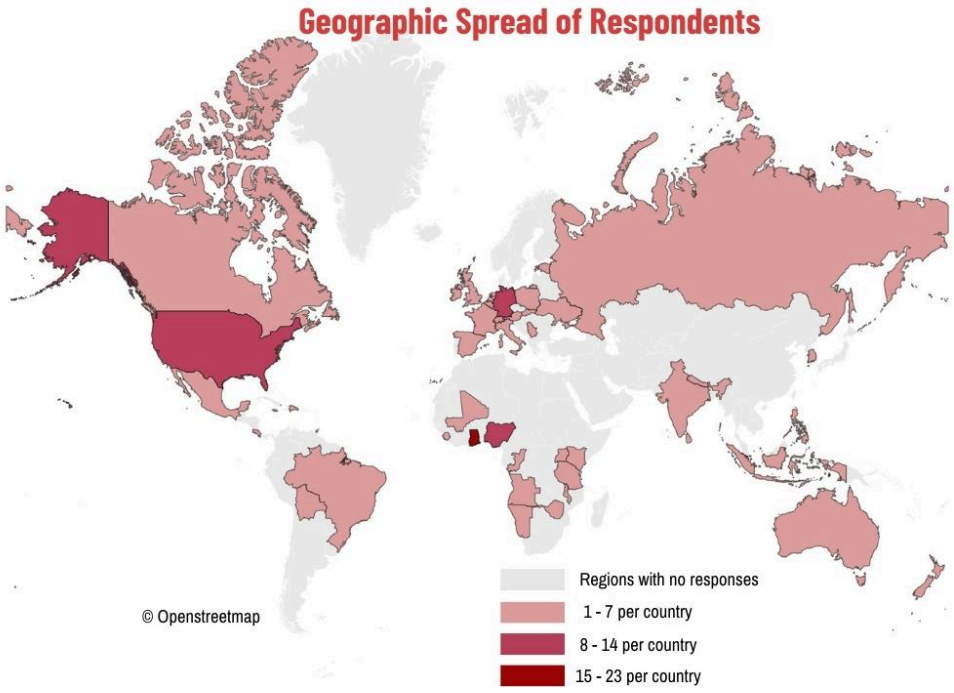


Image 1. Map of Showing Respondents Countries

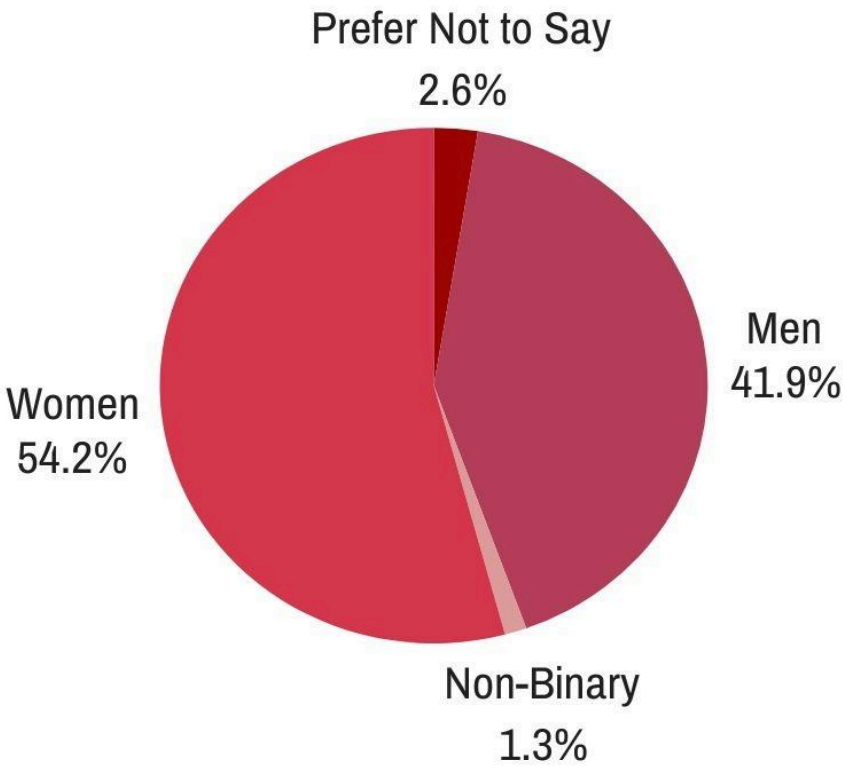


Figure 1. Gender of Respondents

Out of the 155 responses, 84 were women, 65 were men, 2 identified as non-binary, and 4 chose not to disclose their gender. See the pie chart above for the breakdown in percentages.

Table 1: Age of Respondents

Age	Respondents	Percentage
18 - 24	45	29%
25 -34	58	37%
35 - 44	30	19%
45 -54	12	8%
55 - 65	6	4%
65 and above	4	3%
Total No. Respondents	***155***	***100%***

It can be seen from the table above that these findings show the age variety within the OSM community, with people of all ages actively engaged in mapping the world. Multigenerational contributors work together to create a comprehensive and inclusive map that benefits everyone.

Table 2: Educational Background of Respondents

Educational Background	Respondents	Percentage
High School	15	10%
Bachelor's Degree	87	56%
Masters Degree	40	26%
PhD or Higher	7	5%
Vocational/Technical	2	1%
Others	4	3%
Total No. Respondents	***155***	***100%***

From the table above, it can be seen that most of the respondents have a bachelor's degree, followed by a master's degree. A few had higher educational qualifications, with others involved in technical or vocational training, among others. These statistics illustrate the diverse educational backgrounds of OSM contributors, underscoring the mapping community's inclusivity and accessibility. Everyone, regardless of formal education, has a role to play in creating a detailed and comprehensive map of the world we live in.

Questions directed to Women

Table 3: Answers to question "What encourages you to participate?" categorized by themes.

Themes	Respondents	Percentage
Help	37	44.05%
Learn	19	22.62%
Empowerment	11	13.10%
Passion	10	11.90%

No answer	7	8.33%
Total	***84***	***100.00%***

Out of the 84 respondents who were women, 77 of them answered this question. As this question was an open ended question, I grouped the responses into 4 themes as seen in the table. **Most women** stated that they are encouraged to participate in OSM because they want to **help**. That is **helping solve community problems** without necessarily being there physically and the difference their edits make. Others also participated because they want to **learn** and this in the form of they wanting to know more about OSM or it is in line with what they are pursuing in school or their career. While others feel **empowered** by participating because they meet like minded people like them and are able to interact with. Some also participated because they have **passion** for OSM. While going through the answers, one answer that touched my heart, I quote "***I believe that a portion of my time should be reserved for volunteering, that's one way that I can appreciate God for his goodness".*** ☺

Table 4: Answers to question "What prevents you from participating?" categorized by themes

Themes	Respondents	Percentage
Not enough Time	13	15.48%
Little or no Knowledge	9	10.71%
Career	9	10.71%
Others	8	9.52%
Low Communication	6	7.14%
Underrepresentation	5	5.95%
Internet	3	3.57%
No answer	31	36.90%
Total	***84***	***100%***

This question was also grouped into themes for easy analysis. As seen in the table above, there are 7 themes from which most women stated they have **limited time** to participate because of reasons like responsibilities in the house and busy schedules, while others also stated they have difficulty combining it with their **career.** Some also stated that they had little or no **knowledge** of it and did not know where to begin. **Communication** was also stated as one of the reasons why

they don't participate in the sense that they stated there was a low and bad flow of communication as to the information that has been passed, while some felt like women were **underrepresented** and therefore felt intimidated when joining events with men being the majority. Getting **access to the internet** was also a hindrance to some women's participation. **Others** also stated that access to resources like a laptop also hindered them from participating.

In all we had 53 of the women who answered that question with 31 not answering.

Table 5: Suggested ways we can increase the participation of those who identify as women in the OpenStreetMap Community by women

Themes	Respondents	Percentage
Advertise	17	20.24%
Trainings	15	17.86%
Empowerment	11	13.10%
Others	9	10.71%
Opportunities	6	7.14%
Incentives	6	7.14%
No answer	20	23.81%
Total	***84***	***100%***

We had 64 women answer this question and the majority of them suggested that in order to increase the participation of women:

- More **advertisements and training** should be made. That is to make use of similar platforms such as the Geochicas, Women in GIS, Women+ in Geospatial and other women organizations for promotion, intensive social media engagements.
- **Advocating** in schools, offer more training and educate women on the importance of OpenStreetMap. ***"Empower them with resources, like setting up a center where it will be equipped with computers and internet and women can be free to move and participate".***
- **Coaching and mentoring** the women in OSM so they can be mentors and role models to encourage other women to participate.
- **Giving incentives** in the form of recognition of their efforts, stipends and

- **Providing opportunities** like scholarships, paid internships and fostering women in leadership/governance positions. Support women lead/ focused initiatives such as Crowd2Map.
- Others include better communication culture, ***"working on making the conversational tone in certain forums/communities less aggressive".***

Few Highlights from Responses

- *"By profiling women who are making a difference in the open mapping community. Having seminars that are focused on women empowerment. These seminars should include women from 18 years and above. Open mapping can also be introduced to kids at a young age like high schoolers. Let girls map can host outreach programs in communities where women are still being undermined. Those already part of the mapping community can do projects that include women in mapping even when they are not Youthmappers".*

- *"Have varying hours, make events child friendly such that we can bring our children along. Have women only events - usually men far outnumber us and it can be intimidating at times".*

- *"Women, girls, are brought up with the notion that tech things are not for them but the boys. So women don't tend to go into tech careers, or have techie hobbies. OSM is seen as a techie thing. Mapping, aerial photography, aligning imagery with GPS traces, or strava heatmaps is very techie. It doesn't come over as 'hey let's improve the world".*

- ***"In general, improving the experience of interacting with the online community would be helpful. Exactly how to achieve that is hard to say.***

  *For example, my experience with the email lists is that they are not welcoming. **The tone of responses was often condescending**, and the "advice" often seemed to be **based on sexist assumptions**. This does not make OSM feel like a welcoming community, and if I didn't have other reasons to continue my involvement, this would have been the end of it. We have the classic conundrum, in this case, of women not participating because space*

does not feel welcoming, so we need more women involved to make it so. But because it is unwelcoming to women..."

Questions directed to Men

Table 6: Answers to question "Thoughts on the participation of those who identify as women in OpenStreetMap Community?" categorized into themes

Themes	Respondents	Percentage
Low-Active	22	33.85%
Medium-Active	15	23.08%
Highly-Active	7	10.77%
No response	21	32.31%
Total	***65***	***100%***

Out of the 65 men that participated in the survey, 44 of them answered this question. The responses were put in themes and seeing from the table above most of them stated the participation of women is low and some of the reason given are: *OSM communities communicate in a way that favors detail-focused introverted personality types, which discourages the participation of women and men who are not detail-focused introverts. Additionally, women need to be more active to build a career and get a job, and they need a lot of free time to participate in technical projects like OpenStreetMap. Communities in wealthier countries where people have a little more free time have more participants, but there are fewer women than men in the OSM community due to historical and cultural reasons.*

Table 7: Answers to question "In your perspective, what do you think prevents those who identify as women from participating in OpenStreetMap Community?" categorized into themes.

Themes	Respondents	Percentage
Lack of interest	18	27.69%
Too Technical	13	20.00%
Not enough Education	8	12.31%
Gender roles	8	12.31%
Negative behaviours some of men	7	10.77%
No response	11	16.93%
Total	***65***	***100%***

As seen from the table above the responses were themed and the majority stated that **lack of interest** in OSM is the major issue that prevents those who identify as women from participating in OSM. While others think it is **technical, education and gender roles** which affect their participation. Surprisingly, it is good to know **men acknowledge the fact that some of their behavior** in the OSM community also puts women off from participating in OSM. Overall, we had 54 men out of the 64 respond to this question.

Some of the highlights of their responses are:

- **"***I think it's because of the digital divide, less women have access to the internet and technology as compared to men***"**.

- **"**...*I understand that everyone has different experiences, opportunities and availability. Women especially can be burdened with more than their fair share of parenting, house work. This can be unappreciated and results in tired time poor participants***"**.

- **"***Access to appropriate technology, toxic discourse in parts of the OSM online community***".**

- **"***Many, **many men in leadership positions** and many **belligerent male voices** in the community spaces***".**

- **"***I fear that, in the IT field and consecutively also on OSM (not to mention the geographical field in general), there is a **lot of male chauvinism***"**.

- *"Many people know OSM from (computer science) university studies and tech conventions. As women are under-represented there, maybe this also reflects the OSM community"*.

Table 8: Suggested ways can we increase the participation of those who identify as women in OpenStreetMap Community by men

Themes	Respondents	Percentage
Advocacy	32	49%
Incentives	10	15%
Women focused activities	9	14%
Welcoming tone	3	5%
No response	11	17%
Total	***65***	***100%***

As seen from the table above most men stated:

- **Advocacy** on OSM communities will increase the participation of women in the OSM community.
- Whereas, others thought giving them **incentives** and organizing more **women focused activities** will boost their participation.
- Some also stated **welcoming tone in messages /forums** will also help increase the participation of those who identify as women.

Some highlights of the responses are:

- *"Women should be given leadership roles"*

- *"Promote women's contributions. Of course, correcting an imbalance through another direction may be a dangerous course, but it would certainly show women that they can*

contribute too. And let's face it, there is an imbalance right now that needs to be corrected, if the current methods aren't enough to promote equity then those may not be equitable afterall".

- *"Make women more visible to show they are not alone. I have no Idea how many women are behind OSM Usernames. It looks maybe more man-dominated than it is. Soften the language in the forum".*

- *"I think it would be good to promote OSM and organize mapping workshops in schools and other gender-balanced places".*

- *"More women-only events and courses (also broadcasts with only women presenting); more women doing courses; more promotion of studies where OSM data can be used for gender".*

- *"Studies Supporting initiatives led by women, as mapathons, small conferences, innovation projects, etc. Having women in leadership positions can be an incentive to others to join".*

- *"Put incentives that would encourage women into mapping, e.g. scholarships to mapping conferences".*

Additional Comments

- *"The meetings should be regular at least twice or three times every month to keep participants active".*

- *“It may be useful to emphasize that OSM is not only a technical project but mostly a human community”.*

- *“Personally I like the technical part in itself, and human relationships are kind of a bonus, but I understand that technological details can be daunting to some. Maybe especially for those who identify as women”.*

- *“I think that if you update OSM only like a big database, it will not be of interest to women. But if OSM is promoted as a tool that helps, for example, to make vulnerable groups visible, I think that the support of women will be unconditional”.*

- *“I think it would be good to show that contributing to OSM is not a particularly time-consuming endeavor, but something which one can do in one's daily life”.*

- *“My concrete tip is to promote OSM in schools with concrete worksheets for teachers and mappers that appeal to both girls and boys - like the OpenSchoolMaps.org project does, for example”.*

- *“Avail led roles to females so they can train and lead more projects to enable them to set agendas and programmers that increase female participation”.*

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- *“I feel more effort has to be put in educating women generally not to limit themselves in any sphere as a lot of women have accepted the fact that society will always consider them inferior and therefore there's no need to try. One way to achieve this is also by giving women equal opportunities with men everywhere”.*

- *“Many women still think that some job positions are only for men, it is necessary to develop awareness and inclusion methods for Women”.*

- *“I think women can be encouraged to join open mapping by including more than just mapping to the constitution. We can have some women who might train for technical vocational skills that can be used to give relief when disasters happen like first aid”.*

- *“Promoting mapping on android phones and organizing school contests”.*

- *“…The problem in the majority of the cases is that women are invisible if men are leading, so the challenge here is how to create tools or methods to empower these women to take leading positions and of course, to work with men about the importance of giving these spaces to women as well”.*

APPRECIATION

Thank you everyone that took time out of their busy schedule to participate in this survey and my greatest thanks goes to those you helped me from the start of the project right to the end in the person of Nell Gray from London MSF, Pete Masters, Racheal Vanice, Heather Leson, and a special thank you to my supervisor Arnalie Vicario her support throughout the process. I also thank the whole HOT community team for your enormous support.